SPECIFICATIONS

MHF (VOR)

ENGINE GENERATOR REPLACEMENT

SMITH POINT, TEXAS

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

TECHNICAL OPERATIONS (ATO)
CENTRAL SERVICE AREA (CSA)
ENGINEERING SERVICES

INFRASTRUCTURE / AJW-C14E
FORT WORTH, TEXAS

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FINAL DESIGN SUBMITTAL

TABLE OF CONTENTS

DIVISION 1 GENERAL REQUIREMENTS
TABLE OF CONTENTS

DIVISION 2 SITE WORK
TABLE OF CONTENTS

DIVISION 7 THERMAL AND MOISTURE PROTECTION
TABLE OF CONTENTS

DIVISION 15 MECHANICAL
TABLE OF CONTENTS

DIVISION 16 ELECTRICAL
TABLE OF CONTENTS

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 The drawings and specifications comprise a complete package. Where conflicts arise between Information contained in the drawings and specifications, obtain direction from the FAA COTR.

1.2 SCOPE OF WORK

A. The scope of the project is to replace the existing Engine Generator (E/G) with a Kohler 30KW (CLIN 424) diesel generator. The project involves:
   1. Renting a temporary E/G and installing an open transition ATS.
   2. Remove the load bank from the "New" E/G to enter through the door way and then reconnect.
   3. Remove and dispose of the existing equipment.
   4. Install GFE and contractor furnished equipment in accordance with the contract drawings.
   5. Install new mechanical Air Intake Assembly, Radiator Exhaust Assembly, Fuel piping within the building to the E/G Day Tank, Exhaust Fan, New Air Intake Vent, Gravity Louvers, Insect Screen on hoods, etc.
   6. Assume asbestos in gasket material on Exhaust and for installation.
   7. Install New TVSS, ground rods to ground hoods, pipes, etc.
   8. Wire the control wiring for the E/G for remote monitoring and remote start.
   9. Perform a number of shutdowns and cutovers and various other items that are identified in the contract drawings.
   10. Install New 150A Fusible Disconnect

B. Maintain several fire extinguishers to eliminate any fire produced by the residual fuel.

1.3 INTENT OF SPECIFICATION

A. This specification identifies all labor, materials and equipment to perform the work required. The specification also includes a cutover plan. An installation schedule shall be provided prior to the pre-construction meeting once a start date is established.

1.4 CONTRACT DOCUMENTS

DRAWING NO.	DRAWING TITLE
MHF-D-VOR-G001	COVER SHEET AND INDEX OF DRAWINGS
MHF-D-VOR-G002	GENERAL NOTES
MHF-D-VOR -A001	NEW BUILDING LAYOUT
MHF-D-VOR -D001	EXISTING LAYOUT/DEMO PLAN
MHF-D-VOR -D002	ELECTRICAL DEMO PLAN/TEMP. PLAN
MHF-D-VOR -E001	NEW ONE LINE DIAGRAM
MHF-D-VOR -E002	E/G ROOM PANEL AND CONTROL SCHEDULE
MHF-D-VOR -E003	E/G CONTROL WIRING
MHF-D-VOR -E004	MISCELLANEOUS ELECTRICAL WIRING
MHF-D-VOR -E005	NEW (GFE) ATS DETAIL
MHF-D-VOR -E006	DAY TANK WIRING DIAGRAM
MHF-D-VOR -M001	MECHANICAL NOTES
MHF-D-VOR -M002	MECHANICAL DETAIL
MHF-D-VOR -M003	ENGINE GENERATOR CLIN 424
MHF-D-VOR -M004	FUEL AND DAY TANK DETAIL

*** END OF SECTION 01010 ***

SECTION 01020 - SITE ACCESS, CONSTRUCTION LIMITS, USE OF FACILITIES WORK HOURS AND SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 EXISTING FACILITY OPERATION

A. The contractor shall perform all work with a minimum disruption to the FAA operations. All work shall be coordinated through the FAA's COTR.

1.2 CONSTRUCTION LIMITS AND ACCESS

A. The contractor shall confine operations, activities, storage of materials and employee parking within the designated contractor's work area, as specified by the COTR.

B. Damage to existing buildings, paving, lawns, curbs, sidewalks, gates, etc., due to access to the job site shall be the responsibility of the contractor. All costs of repairs shall be paid by the contractor. It is the contractor's responsibility to identify, in writing, all existing damage to the existing building, paving, lawns, curbs, gates, etc, in the construction area prior to start of construction.

1.3 INSPECTION OF SITE BY CONTRACTOR

A. The contractor shall have carefully examined the premises to determine the extent of work and the conditions under which the work must be done.

1.4 CONTRACTOR USE OF PREMISES

A. The facility is operational 24 hours per day, seven days per week and that operation within the work area will not cease throughout the course of contract. All efforts shall be made to assure minimum interference with contractor activities but in no case will the contractor be allowed to interfere with the facilities operations and daily work activities.

B. The contractor shall maintain the job site in a neat and orderly condition. The contractor shall require each subcontractor engaged upon the work to bear his full responsibility for cleaning up during and immediately upon completion of his work, and the daily removal of rubbish, waste, tools equipment and other apparatus caused by or used in the execution of his work; but this shall in no way be construed to relieve the contractor of his primary responsibility for maintaining the building and the site clean and free of debris.

1.5 GOVERNMENT USE AND ACCESS TO PREMISES

A. The Government reserves the right to enter the premises during the term of the contract for periodic work inspections.

1.6 WORK HOURS

A. General work hours are from **7:00A.M. To 4:00 P.M**. (may work 10hr work days if FAA can support It.), Monday through Friday. Any deviation from this work scheduled shall be submitted to the COTR for approval. The contractor must be flexible to work night time and early morning hours for shutdowns and cutovers. All shutdowns must be coordinated with a 2 week advance notice to the FAA RE and Facility ESU.

B. Critical work hours - Scheduling of system shutdowns will be discussed further at the pre-construction conference. The site shutdown times are to be coordinated through the COTR. All preparatory work shall be completed prior to shutdown/cutover to minimize downtime. The request shall include the time and date of the shut down including the proposed duration. The

COTR may change the shutdown times at a moments notice due to weather and conditions and FAA requirements.

1.7 SECURITY REQUIREMENTS

A. Contractor shall provide the COTR, a list of contractor's personnel who will require access to the Site. The list shall be kept current during project work. If the contractor is not badged he/she must provide a list of names including a copy of their driver's license.
B. Contractor's personnel may be subject to security investigation by FAA. The contractor shall promptly complete for each such employee such security forms as are furnished by the COTR.
C. Current procedures at FAA facilities include the "right to search." If in the judgment of the FAA personnel or COTR there is cause to search a vehicle or the person, such search may be made.

1.8 SAFETY REQUIREMENTS

A. The contractor shall take all proper precautions to protect persons from injury and to protect property from damage. He/She shall take all necessary steps to ensure proper access to work and leave other areas of passage unobstructed. The contractor shall place all signs, barriers, lights and other warning devices during construction and/or when a potential hazard exists. The contractor shall ensure that all precautions are taken to protect all persons from injury in the vicinity of the work. All safety measures and programs shall be approved by the COTR.
B. Scaffolding, ladders and the like shall be constructed, maintained and used in strict accordance with all statutes and laws regulating there safe usage.
C. The contractor shall be responsible for the safety of his/hers employees, subcontractors, tools and equipment.
D. Contractor shall adhere to all OSHA regulations.
E. The Contractor shall utilize Lockout – Tag out procedures when operating electrical circuits.

*** END OF SECTION 01020 ***

SECTION 01042 - COORDINATION, LOCAL PERMITS, TESTING AND STANDARD REFERENCES

PART 1 - GENERAL

1.1 PROJECT COORDINATION

A. It shall be the duty of the contractor to prepare a detailed schedule of work and work layout to resolve conflicts and to assure coordination of the work by different trades.
B. It shall be the duty of the contractor to resolve all coordination conflicts that arise.
C. The contractor must coordinate delivery of the GFE with the COTR and/or the FAA program office.

1.2 LOCAL PERMITS: N/A

1.3 STANDARD REFERENCES

A. FAA-C 1217F – Electrical Work Interior
B. FAA-STD-19E: Lightning Protection, Grounding, Bonding and Shielding Requirements for Facilities.
C. FAA-C-1391B: Installation and Splicing of Underground Cables
D. National Electric Code (NEC)

*** END OF SECTION 01042 ***

SECTION 01300 - SUBMITTALS

PART 1 – GENERAL

1.1 Within 10 days after the contract award the contractor shall submit to the COTR a progress schedule in a bar chart format showing in detail the proposed progress for construction of the various parts of work, including construction activities, submittal and approval of materials, fabrication of specialty items and their installations.

1.2 REQUIREMENTS INCLUDED

A. The contractor shall submit the following information but not limited to; shop drawings, product data, samples, warranties, certificates, test reports and results, fabrication-installation procedures, materials certificates, contractor submittal checklist, any and all other submittal request as specified herein and as required by the contract documents.

B. All submittals shall be in a manner as to clearly identify materials, equipment, manufacturer, catalog numbers, model numbers and the like and the use for which it is intended for.

C. The contractor shall call to the Governments attention any deviations from the contract documents in writing.

1.3 SHOP DRAWINGS

A. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, schedule or room numbers as shown on the contract drawings.

1.4 SUBMISSION REQUIREMENTS

A. All submittals shall be submitted in time for approval before installation. The submittals may be faxed or emailed to COTR with a transmittal sheet.

B. If the contractor **has not mobilized** at the site, the Government's approval or disapproval of samples, certificates, test reports, shop drawings and the like shall not be more than **5-days** after receipt of the item,. All materials installed in the work shall match the approved submittal. After a submission has been approved, no substitutions will be permitted without written approval by the COTR.

C. If the contractor **has not mobilized** at the site, any disapproved submittal must be corrected and resubmitted within **5-days** for approval by COTR.

D. Submittals for installation and materials must have been approved by the COTR prior to their incorporation into the work.

E. If the contractor **is on site** performing the installation or work, the FAA must answer all contractor requests for information (RFI's) or approval within **24 hours**.

F. If the contractor **is on site** performing the installation or work, any disapproved submittal must be corrected and resubmitted within **48 hours** for approval by the COTR.

*** END OF SECTION 01300 ***

SECTION 01510 - TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Furnish, install, and maintain, temporary facilities required for this project, remove upon completion of the work.

B. Contractor must supply: portable toilets, construction aids, barriers, temporary power and other facilities necessary to protect the work from cold, heat, rain, moisture, wind and the like. **(Note: The FAA will allow the contractor to use the existing electrical and water resources on site. However, all welding equipment must be provided with its own source of power.)**

C. No open fires shall be allowed on the site at any time.

D. The contractor shall promptly remove all temporary facilities from premises at end of work.

E. Legally dispose of all trash at the end of every work day be means of a dumpster or via their construction truck or trailer. The contractor must provide a dumpster and not use any pre-existing on site, if required.

*** END OF SECTION 01510 ***

SECTION 01600 - MATERIALS AND EQUIPMENT

PART 1 – GENERAL

1.1 Material and equipment shall conform to applicable specifications and standards and comply with size, make, type and quality specified, or as specifically approved in writing by the COTR. Manufactured and fabricated products shall be designed, fabricated and assembled in accordance with the best engineering and shop practices.

1.2 SUBSTITUTIONS

A. All substitutions of products, materials, equipment, methods and the like as described in these contract documents shall be made in consolidated requests for the various trades, each request for substitutions shall be made as a separate request. No substitutions shall be allowed except upon written request from the contractor and written approval from the contracting officer,
B. Substitute products shall not be ordered or installed without written acceptance of the COTR.
C. The COTR will determine acceptability of proposed substitutions.

*** END OF SECTION 01600 ***

SECTION 01700 - FINAL INSPECTION AND ACCEPTANCE OF WORK

PART 1 - GENERAL

1.1 CONTRACTOR ACCEPTANCE INSPECTION (CAI)

A. When the contractor considers the work is complete, he/she shall notify the COTR and provide him/her with the following items:
   1-10.2.1.1 Required operational, and maintenance data for the equipment.
   1-10.2.1.1 All required documentation form the GFE Vendors (test data).

********Note: The CAI must be signed by the FAA, while the contractor is onsite*********

1.2 JOINT ACCEPTANCE INSPECTION (JAI)

A. The COTR will schedule the JAI once the CAI is completed. The inspection must be done while the contractor is onsite. This may be done in conjunction with the CAI. The COTR must provide the contractor with a copy of the signed JAI.

1.3 PUNCH LIST

A. The COTR will furnish the contractor with a listing of all discrepancies in the work, material and equipment noted during the final inspection.

1.4 ACCEPTANCE OF WORK

A. The contractor shall correct discrepancies noted during the final inspection, clean the premises and notify the COTR that the work is ready for acceptance.

*** END OF SECTION 01700 ***

SECTION 01710 - CLEANING

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Execute cleaning during the progress of the project to keep a neat and safe workplace specifically at the end of each work day, during the work day as required, and when debris or other construction material or equipment becomes a safety hazard.

B. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal areas away from the site. A dumpster shall be supplied by the contractor during the duration of the project.

*** END OF SECTION 01710 ***

**** END OF DIVISION 1 ****

DIVISION 2
SITEWORK

SECTION 02501 - HAZARDOUS MATERIALS

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. General: This section details what is known about specific hazardous materials that might be affected by the work as described in the attached plans and drawings. It includes warnings to the General Contractor and his subcontractors, and general rules on how to perform the work and protect workers and the environment.

B. This section covers work with vinyl asbestos floor tile (VAT) lead-based paint (LBP), and other asbestos-containing materials (ACM) and lead-acid storage batteries. Any other hazardous material suspected of being present at the site should be brought to the attention of the COTR.

C. It is the responsibility of the Contractor to perform the following: personal monitoring for airborne asbestos fibers, lead dust and other airborne contaminants in compliance with applicable OSHA regulations, all work in a safe and legal manner, and in compliance with all applicable Federal, State, and local regulations, and FAA guidelines. The Contractor shall be responsible for securing and paying for:
   1. Provide independent company to perform air monitoring;
   2. Labor, materials and equipment;
   3. Other facilities and services necessary for proper execution and completion of the work;
   4. All permits, government fees and/or notifications, as required by Federal, State, and local regulations.
   5. Any required employee training (e.g. – supervisor and worker, asbestos awareness, lead awareness, respiratory protection program, etc.) and /or monitoring (e.g. – medical, employee exposure, etc.);
   6. Clearance testing/air monitoring;
   7. Waste disposal permits and testing, and associated disposal costs; and
   8. Providing submittals to the COTR prior to the commencement of work.

1.2 DEFINITIONS

A. **Abatement:** Procedures to control fiber or dust release from asbestos or lead-containing materials, or other hazardous materials. Includes removal, encapsulation, enclosure, repair, demolition, disposal and renovation activities.

B. **Clearance Air Monitoring:** The processes of measuring the concentrations of airborne contaminants to determine if an abated area is sufficiently clean to allow reoccupancy.

C. **Competent Person:** A person who is capable of identifying existing ACM or LBP hazards in the workplace. The duties of the Competent Person include the performance of supervision of the following: establishing the negative-pressure enclosure, ensuring its integrity, and controlling entry and exit from the enclosures; supervising any employee exposure monitoring required by the OSHA standards; ensuring that all employees in the work area wear the appropriate personal protective equipment and are trained in the use of appropriate methods of exposure control and the use of the hygiene facilities. The Competent Person shall also be trained in the contents of OSHA regulations 29 CFR 1926.1101 and 29 CFR 1926.62; and other practices for reducing the hazards.

D. **Eight-Hour Time Weighted Average (TWA):** Airborne concentration of a contaminant averaged over an 8-hour workday to which an employee is exposed.

E. **Hazardous Materials Abatement Subcontractor:** The individual and/or business performing the Hazardous Materials Abatement. The Subcontractor is responsible for the proper completion of project activities in accordance with all Federal, State and local regulations, and FAA guidelines.
F. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Exclude from this definition are other organic lead compounds.
G. **Lead-Based Paint (LBP):** HUD defines lead-based paint as containing equal to or greater than 1mg/cm2 when analyzed by an x-ray Fluorescence Spectrometer (XRF), or equal to or greater than 0.5 % when analyzed using Atomic Absorption Spectrophotometry (AAS) in a laboratory. Other paints containing less than these amounts may be called "lead-containing" in this document. OSHA regulations apply to lead "in any amount".
H. **Permissible Exposure Limit (PEL):** An airborne concentration of asbestos fibers (longer than 5 micrometers) of 0.1 fibers per cubic centimeter (f/cc) calculated as an eight (8) hour time-weighted average (TWA). For lead, the PEL is 50 micrograms per cubic meter (ug/m3).
I. **TSDF:** An EFA and/or State approved Treatment, Storage, and Disposal Facility for hazardous materials.
J. **Visible Debris:** Any particulate material or residue that is visually detectable on a surface without the aid of instruments.
K. **Asbestos:** The mineral amosite, chrysolite, crocidolite, actinolite, anthophyllite and tremolite.
L. **Asbestos-Containing Material (ACM):** Material composed of asbestos of any type in an amount greater than 1 percent by weight.
M. **Friable Asbestos**: ACM that, when dry, may be easily crumbled, pulverized, or reduced to powder by hand pressure; includes previously non-friable material after it has become damaged to the extent that when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.

1.3 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.
   1. CODE OF FEDERAL REGULATIONS (CFR):
      a. OSHA General Industry Safety and Health Standards (29 CFR 1910), and OSHA 1910.120, Hazardous Waste Operations
      b. OSHA Construction Industry Standards (29 CFR 1926), including but not limited to, the following:
         (1) CFR 1926.62: Lead
         (2) CFR 1926.1101: Asbestos
         (3) OSHA: Flooring Industry Settlement Agreement (asbestos, 6/15/95)
         (4) OSHA: Roofing Industry Settlement Agreement (asbestos, 3/15/95)

      c. National Emission Standards for Hazardous Air Pollutants (40 CFR, Part 61)
      d. EPA Resource Conservation and Recovery Act (40 CFR, Part 260 through 271)
      e. Department of Transportation (DOT) 49 CFR Par 173 and Part 178
      f. Environmental Protection Agency (EPA) Final Rule (40 CFR Part 761.40-180; Marking, disposal, spill cleanup, and records and monitoring requirements for PCBs.
      g. EPA Resource Conservation and Recovery Act (40 CFR, Part 266, Subpart G, Standards for Materials Being Recycled/Reused, and Standards for Lead-Acid

Batteries Being Reclaimed) Also refer to EPA 40 CFR 273, Standard for Universal Waste Management.

2. FEDERAL STANDARD
   a. 313: Material Safety Data Sheets, Preparation and Submission

1.4 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

1.5 SUBMITTALS

A. General: Submittals shall be in conformance with Section 01300. Submit the following:
   1. Product data and MSDS where applicable, for the following:
      a. Materials to be used for LBP abatement, including LBP removal chemicals, encapsulants, washing solutions, neutralizers, etc.
      b Materials to be used for asbestos abatement, including polyethylene sheeting, HEPA vacuums and exhaust, personal protective equipment, surfactants, encapsulants, spray adhesives, etc.
      c. Material to be used for lead-acid battery removal, transportation, and recycling, including personal protective equipment and emergency equipment to be on hand in case of spillage or contamination of workers.
   2. Transportation and disposal facilities to be used for hazardous materials.
   3. Permits and Notifications: When hazardous materials are disposed, the Contractor shall submit copies of permits and manifests from applicable Federal, State, and local authorities, and necessary certificates to document that the material(s) has (have) have been disposed of as per regulations and Contract Specifications.
   4. Plan of Action: A detailed site-specific plan of action for handling hazardous materials including, but not limited to, asbestos, lead-based paint, and lead-acid storage batteries must be submitted. The hazardous materials plan of action shall contain the following:
      a. Identification of possible hazards, problems, and proposed control mechanisms.
      b. Description of how applicable safety and health regulations and standards are to be met.
      c. Protection of public or others not related to the operation.
      d. List of names of employees to be used for the work, including specialized training, licenses and experience.
      e Type of protective equipment and work procedures to be used.
      f. Material Safety Data Sheets (MSDS) for and procedures for using, disposing of, or storing toxic/hazardous materials (See also 29 CFR 1910.1200 and 1926.59).
      g. Emergency procedures for accidental spills or exposures.
      h. Interfacing and control of subcontractors, if applicable.
      I. Identifications of any required analyses, test demonstrations, and validation requirements.
      J. Methods of certifications for compliance.
   5. Results of monitoring, clearance tests, and laboratory tests.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Special facilities, devices, equipment, clothing, and similar items used by the Contractor in the execution of the work shall comply with all applicable Federal, State, and local regulations.

2.2 MATERIAL SAFETY DATA SHEETS (MSDS)

A. MSDS shall be available for all products used under this contract. The Contractor shall be responsible for meeting the hazard communication requirements, in accordance with 29 CFR 1910.1200 and 29 CFR 1926.59.

PART 3- EXECUTION

3.1 LEAD-BASED PAINT (LBP)

A. All work affecting painted surfaces or components will conform to OSHA 29 CFR 1926.62. In lieu of bulk sampling, it shall be assumed that the old paint in the buildings, on installed fixtures and on the EGs is LBP. It shall be further assumed that some of the paint may not qualify as LBP (equal to or greater than 0.5 % lead) but does contain lead. The OSHA standard applies to lead in any amount.

B. No torch cutting, burning or welding shall be allowed on any painted surface. Where necessary, localized LBP removal shall be performed in accordance with the Subcontractor's approved plan of action in areas where hot work on surfaces in required.

C. The Contractor shall minimize the amount of lead-containing dust produced from painted surfaces. Where necessary, localized LBP removal shall be performed in accordance with the Subcontractor's approved plan of action in areas abrasive or dust-producing operations are required.

D. The Contractor shall be aware that construction debris and waste materials may be coated with LBP, and the disposal of such materials shall be in conformance with applicable Federal, State, and local regulations.

E. Where abatement or removal of LBP is required by the work, the materials and operations shall be in conformance with latest industry practices, and with OSHA 29 CFR 1926.62.

F. Where LBP has been removed from the substrate, the waste material shall be tested using the TCLP laboratory procedure to determine if the waste must be handled as a hazardous waste.

G. Hazardous waste must be disposed of at an approved TSDF, and a signed and dated uniform hazardous waste manifest must be returned within 14 days to the COTR and the Owner.

H. Where some existing EGs may be re-used, stored, or disposed of, the Contractor shall inform the receiving party that the EG may be painted with L.

3.2 VAT

A. See addendum (#1) in section 02501, for the standard operating procedures for penetration of asbestos containing floor tile, linoleum and mastic.

3.3 LEAD-ACID STORAGE BATTERIES

A. As indicated on the drawings and in the specifications, the existing lead-acid storage batteries are to be removed. The lead-acid batteries shall be removed, and then re-cycled by an approved battery re-cycling facility. However, the FAA may wish to re-use and/or relocate the existing lead-acid storage batteries, and the Contractor shall be informed of such action, unless already so indicated in the drawings or specifications, by the COTR, after decision by the FAA Sector Site Coordinator.

B. The work shall conform to all Federal EPA, OSHA, DOT, State, and local regulations.

C. Workers assigned to move, relocate, transport and re-cycle the lead-acid storage batteries shall be trained in working with Hazardous Materials per 29 CFR 1910.120, and properly protected with personal protective equipment including, but not limited to, head and face protection, acid-resistant gloves, and acid-resistant body protection.

D. The lead-acid storage batteries shall be carefully moved, packaged, labeled, and transported to an approved lead-acid storage battery re-cycling facility or a TSDF facility that has contracted to forward the batteries to an approved re-cycling facility. All handling, packaging, labeling, and transporting of the lead-acid storage batteries shall be in conformance with all applicable Federal, State and local regulations.
E. The Contractor shall submit a manifest attesting to the delivery of the lead-acid storage batteries to an approved TSDF or battery re-cycling facility within 14 days after battery removal. The manifest (or equivalent acceptable to the COTR shall be provided to the COTR and CO.

SECTION 02501 - ADDENDUM (#1)

STANDARD OPERATING PROCEDURE FOR PENETRATING ACM

1. SCOPE:
   a. The following Standard Operating Procedure is intended to provide guidance for the penetration of asbestos containing floor tile, linoleum, and mastic. O&M operations are limited to 3 square feet or less. If the material to be impacted is friable, the SECM elect to use a glove bag or mini-containment.

2. EQUIPMENT:
   a. HEPA vacuum, variable speed cordless drill or hole saw with HEPA attachment (If HEPA attachment is not available, the appropriate attachment from a standard HEPA vacuum may be taped to the drill making sure it is placed in such a position as to allow the drill bit to reach the desired depth), spray bottle with amended water, labeled 6 mil disposal bag(s), disposal towels, 6 mil ply, encapsulant, NESHAP disposal bag labels, disposable rags.

3. PPE:
   a. Respirator with HEPA cartridges, tyvek-type protective suit, rubber gloves, eye protection, steel toed boots.
4. Methodology: The following tasks shall be completed in numerical order
   a. Prepare work area.
   b. Begin air sampling process
   c. Thoroughly HEPA vacuum and wet wipe the area immediately adjacent to the work area
   d. Mark the desired location of the hole(s) on the floor tile/linoleum/mastic
      (1) Penetrations may be made by drilling through a damp sponge, shaving cream, or by applying a coating of vegetable oil to the are to be impacted. None of these methods provide the protection levels of a glove bag or mini-containment and must receive written approval from the SECM prior to start implementation.
   e. Thoroughly mist the location to be penetrated with amended water.
   f. Place the cordless drill in the desired position and switch on the HEPA vacuum drill attachment.
   g. Operate the drill at a very low speed to avoid creating dust.
   h. Place the intake from the HEPA vacuum at the location where the drill bit is impacting the material to remove the debris as it is generated.
   i. Stop the drilling process as necessary to wet wipe accumulated debris from the penetration with a disposable towel and amended water.
   j. When completed, HEPA vacuum and wt wipe work area and all tools
   k. Thoroughly encapsulate the penetrations
   l. Place all the contaminated disposable towels and other debris in the labeled 6 mil disposal bag.
   m. Insert the nozzle of the HEPA vacuum in to the disposal bag and evacuate the air from the bag, gooseneck, and seal with duct tape
   n. Place the labeled 6 mil disposal bag containing the debris accumulated during the repair process (already goose-necked and sealed) into the second labeled 6 mil disposal bag.
   o. HEPA vacuum the disposable suit, remove it by rolling it inside-out, and place it in the second disposal bag. Using amended water and a disposable towel/rag, wet wipe respirator and deposit disposable towel/rag into the second disposal bag. Using the HEPA vacuum, evacuate to air from the second bag, gooseneck, and seal with duct tape.

Place the second disposal bag into a third labeled 6 mil disposal bag. Repeat step #13 to achieve bagging requirements.

(1) Note: If Mini-containment was utilized, refer to Mini-containment SOP for decontamination and disassembly protocols.

p. Conclude air sampling process and complete required air sampling documentation.

q. Remove signs/barrier tape, complete work activity documentation

(1) Note: Documentation will include air sample data sheet, work permit, and waste proposal manifest (If applicable.) Note: FAA provides the work permit.

r. Provide the required documentation to the FAA COTR.

*** END OF SECTION 02501 ***